# Project Report: SARST–V 6 Development

| ***Project Investigator:*** | ***Mitchell Sogin*** |
|---|---|

## Project Progress

During this period of the NAI grant we have completed the development of serial analysis of V6 ribosomal sequence tags (SARST–V6) and its publication. Serial analysis of ribosomal sequence tags (SARST) is a novel technique for characterizing microbial community composition that captures sequence information from concatemers of short 16S rDNA PCR amplicons from complex populations of DNA. We have developed this method for the V6 hypervariable region of bacterial 16S rRNA genes and applied it for analyses of bacterial community composition in hydrothermal marine sediments from Guaymas Basin. Our results resembled those of cloning and sequencing of single, full–length PCR products from RNA genes of the same microbial community. With this work we have demonstrated that SARST–V6 is an ideal methodology for analysis of microbial community composition analysis because of its high–throughput but yet taxonomic information recovery from the microbes present in an environmental sample.

## Highlights

- Consolidation of SARST–V6 as an ideal method to study microbial community composition in natural environments because of its high and informative throughput.
- Publication of this methodology developed under the scope of the NAI in a journal widely distributed and read by microbiologists.

## Roadmap Objectives

- ***Objective No. 5.1:*** Environment–dependent, molecular evolution in microorganisms
- ***Objective No. 5.2:*** Co–evolution of microbial communities